

## REMARKS

Claims 1-20 were presented for examination, are pending and are rejected.

Reconsideration is respectfully requested.

### The 35 U.S.C. 103(a) Rejections

Claims 1-3, 5-8, 11-18 and 20 are rejected as being unpatentable over Meissner et al. in view of Tang. The rejection is respectfully traversed.

Meissner et al. does not teach a tapered gain medium. The reference, in column 10, lines 63-66, states: "For example, although the specific embodiments illustrated in the figures utilize a rod of laserable material with a circular cross-section, laserable material with other cross-sections may also be utilized." The Merriam-Webster Online Dictionary defines the term "cross-section" as "a cutting or piece of something cut off at right angles to an axis." It would be understood from Meissner that, in addition to circular cross-sections, laserable material with other cross-sections such as hexagonal, oval, rectangular, etc., could be used. The taper in the present invention is parallel to the rod axis, not at a right angle to the axis. Therefore the rejection of claims 1, 12 and 16 should be withdrawn. Claims 2, 3, 5-8 and 11 depend from claim 1. Claims 13-15 depend from claim 12. Claim 18 and 20 depend from claim 16. Therefore the rejection should be withdrawn.

Figure 9 of Tang shows a tapered gain enclosure, which is unrelated to the applicants' tapered laser rod. The tapered region in Tang is a low refractive index region (near unity, containing a gaseous medium), while the surrounding medium does not even have to be optically transparent at the laser wavelength. In the applicants'

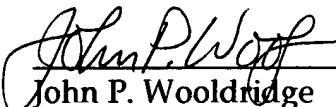
tapered laser rod, the rod itself has to have higher refractive index than the surrounding medium, and the surrounding medium (typically cooling water or air) is also required to be optically transparent at both the pump and the laser wavelengths. The reason for the tapers in the Tang patent are to pinch down the optical cavity so as to only permit lasing to occur in the fundamental (or TEM<sub>0,0</sub>) mode – a technique known as spatial filtering in the laser scientific and technical literature. There is no connection between ASE and parasitic management and the use of tapered laser regions in the Tang patent. Claim 12 and 16 have been amended to clarify that the gain medium is operatively located within a surrounding medium that has an index of refraction that is lower than that of the gain medium. Claims 13-15 depend from claim 12. Claim 18 and 20 depend from claim 16. Claims 4, 9 and 10 depend from claim 1. Claim 19 depends from claim 16. Therefore the rejection should be withdrawn.

#### Conclusions

It is submitted that this application is in condition for allowance based on claims 1-20 in view of the amendments thereto and the foregoing comments.

If any impediments remain to prompt allowance of the case, please contact the undersigned at 808-875-0012.

Respectfully submitted,

  
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John P. Wooldridge  
Attorney for Applicant  
Registration No. 38,725

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